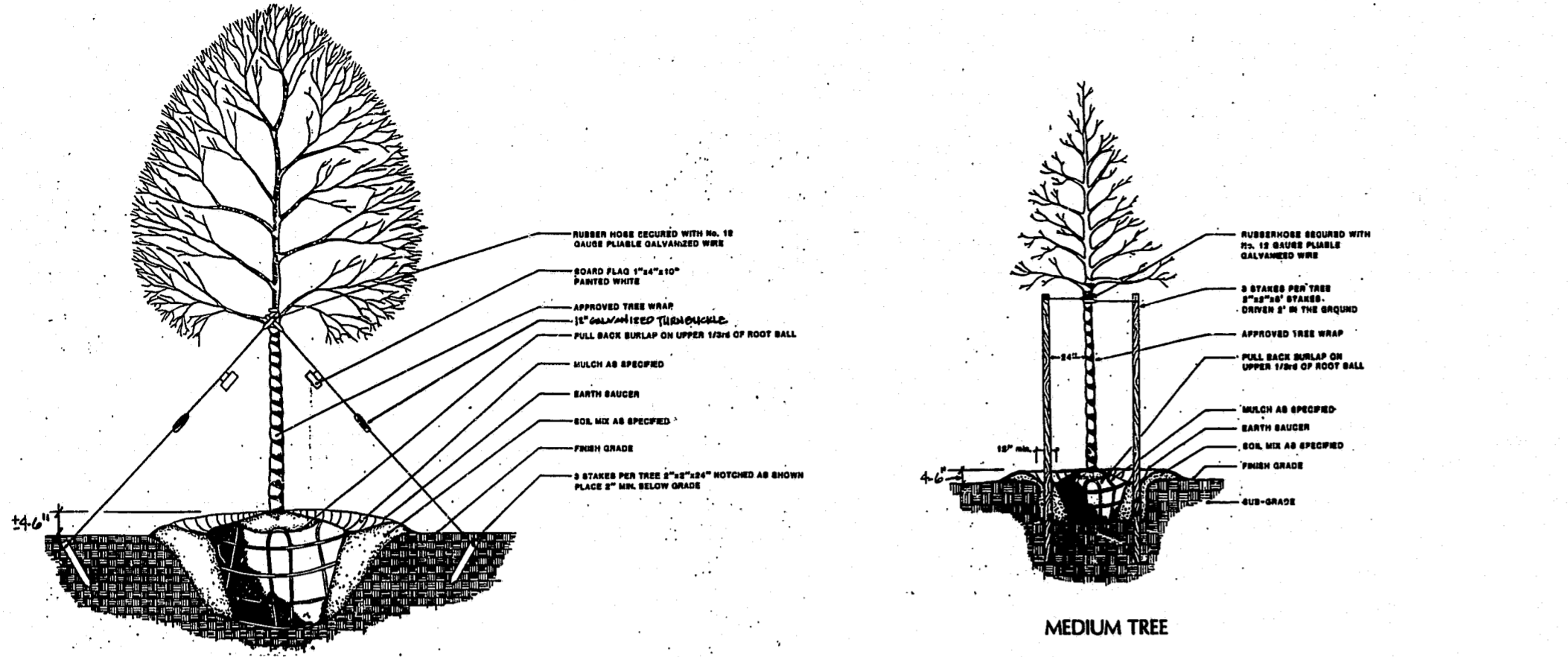
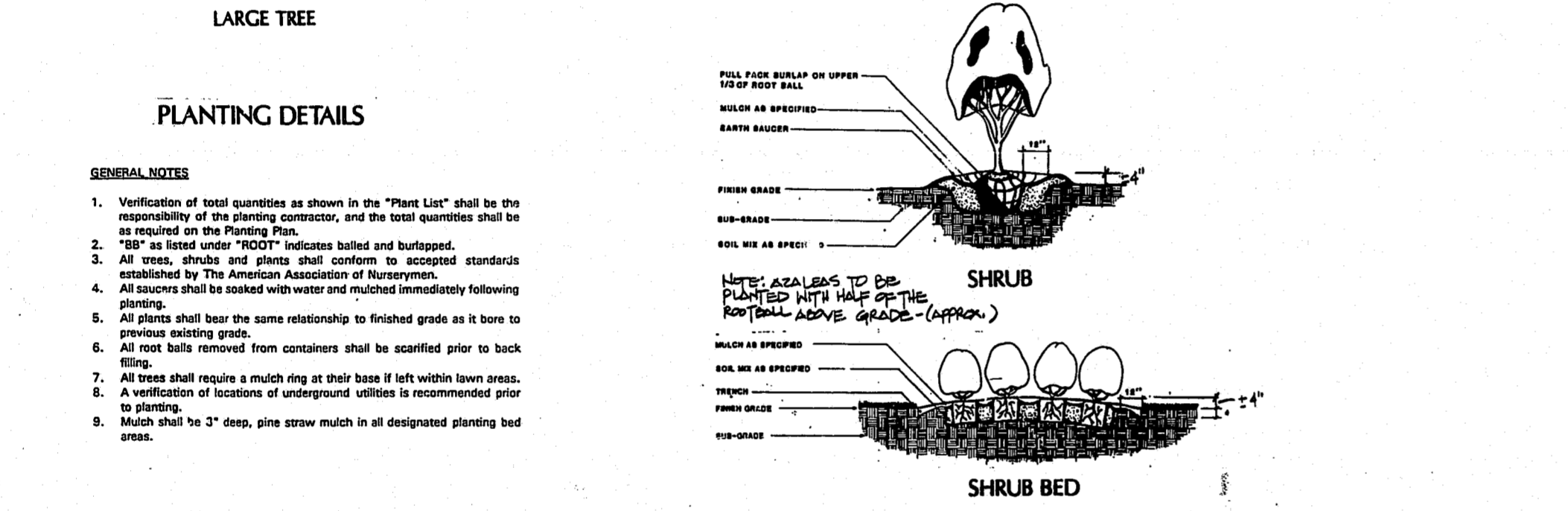


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PLANTING DETAILS



GENERAL NOTES

- Verification of total quantities as shown in the "Plant List" shall be the responsibility of the planting contractor, and the total quantities shall be as required on the Planting Plan.
- "BB" as listed under "ROOT" indicates balled and burlapped.
- All trees, shrubs and plants shall conform to accepted standards established by The American Association of Nurserymen.
- All saucers shall be soaked with water and mulched immediately following planting.
- All plants shall bear the same relationship to finished grade as it bore to previous existing grade.
- All root balls removed from containers shall be scarified prior to back filling.
- All trees shall require a mulch ring at their base if left within lawn areas.
- A verification of locations of underground utilities is recommended prior to planting.
- Mulch shall be 3" deep, pine straw mulch in all designated planting bed areas.

SPECIFICATIONS

PLANTS (SHRUBS, TREES AND GROUND COVERS)

PART 1 - GENERAL

SCOPE:

The work required under this Section consists of all preparations, planting, and related items necessary to complete the work indicated as described in the Specifications.

1.1 APPLICABLE STANDARDS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- 1.1.1 American National Standards Institute (ANSI) Publications:
 - ANSI Z60.180 Nursery Stock
- 1.1.2 Associated Landscape Contractors of America (ALCA) Publication:
 - 1978 Hortus Third, L. H. Bailey

1.1.3 PLANT LIST: A plant list of trees, shrubs and ground covers is included as part of the contract documents. Such plant list shall show the quality for each item, its size and botanical name.

1.1.4 CHANGE IN THE WORK: The contractor may make minor changes in the plant layout from the plans where conditions in the field do not coincide with what is shown on the plans. The Owner's representative may also order minor changes in the work.

1.2 SOURCE INSPECTIONS:

1.2.1 Plant Materials: All plant materials shall be approved by the Landscape Architect prior to ordering. The Contractor shall provide sources and information about the plant material to the Landscape Architect.

1.3 DEFINITION: Pesticide means soil fumigants, herbicides, insecticides and fungicides.

1.4 SUBMITTALS:

- 1.4.1 Manufacturers Certificates of Conformance:
 - a. Plant Materials
 - b. Fertilizers
 - c. Composted wood derivatives
 - d. Peat
 - e. Lime

1.4.2 Certified Test Reports: Soil testing reports from NC Department of Agriculture or other approved agency. (Note: Test report must include a particle size analysis.)

1.4.3 Nursery Certifications: Indicate names of plants in accordance with the ALCA, Hortus Third including type, quality and size.

1.5 DELIVERY, STORAGE, AND HANDLING:

1.5.1 Plant - General: Plant material shall be delivered to the site only after the beds are prepared and are ready for planting. All shipments of nursery materials shall be thoroughly protected from the sun and from drying winds during transit.

1.5.1.1 Deliver branched plants with tied branches and all exposed branches covered with material which allows air circulation. Prevent damage to root balls and desiccation of leaves.

1.5.1.2 Deliver fertilizer and lime to the site in original, unopened containers bearing the manufacturer's chemical analysis, name, trade name, or trademark, and indication of conformance to state and federal laws. In lieu of being furnished in containers, fertilizer and lime may be furnished in bulk with a certificate indicating the above information.

1.5.1.3 Deliver plants with durable waterproof labels in weather-resistant ink. Provide labels stating the correct plant name and size as specified in the list of required plants. Attach to plants, bundles, and containers of plants. Groups of plants may be labeled by tagging one plant.

1.5.2.1 Store and protect plants not planted on the day of arrival at the site as follows:

- a. Shade and protect plants in outside storage areas from the wind and direct sunlight until planted.
- b. Heat-in bare root plants.
- c. Protect balled and burlapped plants from freezing or drying out by covering the balls or roots with moist burlap, seaweed, wood chips, shredded bark, peat moss, or other approved material. Provide covering which allows air circulation.
- d. Keep all plants in a moist condition until planted by watering with a fine mist spray
- e. All plants remain the property of the contractor until final acceptance.

1.5.2.2 Store lime, fertilizers, and mulch in dry locations away from contaminants.

1.5.2.3 Do not store pesticides and antidesiccants with other landscape materials.

1.5.3 Handling: Do not drop or dump materials from vehicles.

1.6 GUARANTEE: See Part 3 - Execution.

PART 2 - PRODUCTS

2.1 PLANTS:

2.1.1 Varieties: Botanical names indicated are listed in ALCA Hortus Third. Furnish nursery stock in accordance with ANSI Z60.1 except as otherwise specified or indicated. Each plant or group of planting shall have a "Tag" letter as indicated on the plant schedule. Spray plants burlap into last or having soil growth with an antidesiccant before digging. All plants of the same specified size shall be of uniform size and character of growth.

2.1.2 Shape: Well-branched, well-formed, sound, vigorous, healthy planting stock free from disease, unsound, windburn, abrasion, and harmful insects or insect eggs and having healthy, normal, and unbroken root system.

2.1.2.1 Deciduous Trees and Shrubs: Symmetrically developed and of uniform habit of growth with aesthetically pleasing and free from objectionable disfigurements.

2.1.2.2 Evergreen Trees and Shrubs: Well developed symmetrical tops with typical spread of branches for each particular species or variety.

2.1.2.3 Ground covers and vines: Number and length of runners and clump sizes indicated, and of the proper age for the grade of planting indicated. Furnish plants in containers, integral containers, or formed homogeneous soil section.

2.1.3 Size: Minimum sizes measured before pruning and with branches in normal position, shall conform to the measurements indicated, based on the average width or height of the plants for the species as specified in ANSI Z60.1. All pruning of trees and shrubs shall be executed by contractor at no added expense to the Owner. Plants larger in size than specified may be used with the approval of the owners representative. If larger plants are used, increase the ball or spread of roots in accordance with ANSI Z60.1.

2.1.4 Balled and Burlapped (BB) Plants: Ball sizes and ratios conforming to ANSI Z60.1. Ball plant with firm, main ball of soil. Wrap BB plant firmly with burlap or strong cloth, and tie securely. Balls shall be twelve inches (12") in diameter for each one inch (1") of trunk diameter, measured six inches (6") above ball.

2.1.5 Container Grown Plants: With sufficient root growth to hold earth intact when removed from containers. Root bound plants will not be accepted.

2.1.6 Plantation-Grown Stock: ANSI Z60.1.

2.2 TOPSOIL:

2.2.1 Topsoil and Subsoil: The Landscape Contractor shall coordinate with the General Contractor regarding the availability of topsoil on site. If the available topsoil is suitable for planting as per details, the Landscape Contractor should utilize this topsoil depending upon availability. Submit a soil test report to the Landscape Architect before utilizing soil to the job site. Amend the soil as outlined in 2.2.2 below based on test recommendations. The Contractor shall also provide a soil fumigant to kill weed seeds disturbed by moving operations. Subsoil shall be from plant excavation holes on site. Both topsoil and subsoil to be free from objectionable weeds, litter, clods, stiff clay, stones larger than one inch in diameter, stumps, roots, trash, toxic substances, or any other material which may be harmful to plant growth or hinder planting operations.

2.2.2 Composition: Amend topsoil to supply the following composition requirements: PH between 5 and 7. Maximum particle size, 3/4 inch, with maximum 3 percent retained on 1/4-inch screen. Soluble salts shall not exceed 500 ppm. Other components shall be within the following percentages:

- silt 25-50
- clay 10-20
- sand 20-35

2.2 SOIL CONDITIONERS: Use singly or in combination as required to meet specified requirements for topsoil.

2.3 PH ADJUSTERS:

2.3.1 Limes: ASTM C 602, commercial agricultural limestone containing a minimum of 94 percent of total carbonate, 42 percent calcium, and 42 percent magnesium. Provide the following ASTM E 11 gradation: minimum 100 percent passing the No. 20 sieve and 75 percent passing the No. 100 sieve.

2.3.2 Peat: Natural product of peat mass derived from a freshwater site. Shred and granulate peat to pass a 1/2-inch mesh screen and condition in storage pile for minimum six months after excavation.

- Material furnished shall not have been cultivated or aged, and shall meet the following requirements:
 - a. Minimum of 85% pure organic matter.
 - b. Maximum of 60% moisture by weight as received.
 - c. Minimum of 100% water absorption per 24 hours submersion in water by weight.
- From the initial shipment and prior to use of any peat delivered, submit certification in duplicate showing the results of laboratory tests which fulfill the above requirements and, if acceptable, will serve as a standard for subsequent shipments. Samples of peat delivered may be taken any time for testing. Rejected peat shall be immediately removed from the job site.

2.5 FERTILIZER:

2.5.1 Commercial Grade Fertilizer: Free flowing, and uniform in composition, with nitrogen-phosphorus-potash ratio of 10 percent, 10 percent available phosphorous, and 10 percent potash or as per Soil Test.

2.5.2 Controlled Release Fertilizer: Magnesium ammonium phosphate and magnesium potassium phosphate with nitrogen-phosphorus-potassium ratio of 10 percent nitrogen, 10 percent phosphorus, and 10 percent potassium, granulated to pass 1/8-inch screen or as per Soil Test.

2.6 MULCHES: Free from noxious weeds, mold, or other deleterious materials. Mulch shall be 4" clean pine straw.

2.7 TRUNK WRAPPING MATERIAL: (Required only for smooth, thin barked species such as Magnolia, Quercus, and other species.) Do not wrap trees having thick rough or fissured bark.

2.8.2 Composition: Equip hydraulic equipment for liquid application of chemicals with leaf-spray tanks and positive agitation method. Calibrate and meter equipment so that application of chemicals in specified amounts can be determined. Equip equipment with gauges and valves capable of maintaining constant application pressure.

2.8 STAKING AND GUYING MATERIAL:

2.8.1 Guying Stakes: For trees over 3" caliper, stakes shall be 24" long with 3 stakes per tree. All guy stakes shall be of durable lumber capable of withstanding above ground and underground condition during the period of guarantee. For trees 3" caliper and less stakes shall be 24" long, balled in ground; 3 stakes per tree. All staking must be within the mulch ring of the tree. Stakes should be driven deep enough so their tops do not show above the mulch in the case of trees over 3" caliper.

2.8.2 Guying Material: 2.8.2.1 Guying Wire: 12 gauge malleable galvanized steel.

2.8.3 Hose Chafing Guards: New or used 2-ply 3/4 inch-diameter reinforced rubber or plastic hose, black or dark green, all of same color.

2.8.4 Flags: White surveyor's plastic tape, 8-inch long or 1 inch x 4 inch x 10 inch board flag painted white, fastened to guying wires or cables.

2.8.5 Turnbuckles: Galvanized or cadmium-plated steel with minimum 3/8-inch long openings fitted with screw eyes.

2.8.5.1 Eye Bolts: Galvanized or cadmium-plated steel with 1/4-inch diameter eyes and minimum screw length 1-1/2 inches.

2.9 ANTIDESICCANTS: Sprayable, water insoluble vinyl-vinylidene complex which retards moisture retarding barrier not removable by rain or snow. Film shall form at temperatures commonly encountered out of doors during planting season and have a moisture vapor transmission rate (MVTR) of the resultant film of maximum 10 grams per 24 hours at 70 percent humidity.

2.10 PESTICIDES:

2.11 Chemicals: Soil Fumigant, Insecticide and Fungicide: EPA registered and state approved.

2.12 WATER: Suitable quality for irrigation and provided by Contractor.

PART 3 - EXECUTION

3.1 TIME RESTRICTIONS AND PLANTING CONDITIONS:

3.1.1 Planting Dates: It shall be Contractor's responsibility to coordinate delivery of materials and coordinate with other contractors in order to meet schedule.

3.1.2 Restrictions: Do not plant when ground is frozen, snow covered, or muddy. Contact Owners Representative when weather conditions prevent planting and maintain records of days lost to weather conditions which affect final acceptance date.

3.2 PREPARATION:

3.2.1 Layout: Stake out approved plant material locations and bed outlines on the project site before digging plant pits or beds. The Owners Representative reserves the right to adjust plant material locations to meet field conditions.

3.2.2 Preparation of Planting Areas: Remove existing trees, shrubbery, and beds that are to be preserved in a manner that will effectively protect them during planting operations. All areas to receive seed or sod are to have the subsoil graded to drain and scarified to a depth of 4".

3.2.2.1 Excavation for Planting: Verify the location of underground utilities. Remove any rock or underground obstruction to depth necessary to permit proper planting depth. Measure depth of pits from finished grade. Depth of excavation shall provide proper relation between top of ball and finished grade as specified in paragraph entitled "Handling."

3.2.2.2 Balled or Potted Plants with ball or container less than 12 inches in diameter: excavate pits at least 1/2 inches larger in diameter than size of ball or container.

3.2.2.3 Balled or Potted Plants with ball or container greater than 12 inches in diameter: excavate pits at least 18 inches larger in diameter than size of ball or container.

3.2.2.4 Trees: Excavate pits at least 24 inches larger in diameter than size of ball or spread of the root system

3.2.3 Soil Mix: Unless otherwise specified or indicated on the drawings, the following mixture (thoroughly mixed by volume) shall be used for backfill around plants as specified in details and herein after referred to as "Soil Mix". Topsoil 3 parts; Peat Moss 1 part. Till plant plants to a minimum depth of 6". Spread soil mix uniformly over plant beds and incorporate into existing soil.

3.2.4 Watering Basins: Form with topsoil around each plant by replacing a mound of topsoil around the edge of each pit. Watering basins shall be 6 inches deep for trees and 4 inches deep for shrubs. In the case of those plants located in irrigated areas, no watering basin is required.

3.3 PLANTING:

3.3.1 Handling: Move balled and burlapped and container-grown plants only by supporting the ball or container. Set plants to depth specified on planting details. Replace balled plant with ball or container cracked or broken either before or during the planting process.

3.3.1.1 Provide mulching material over entire saucer and berm surface around plants as indicated. Keep mulch out of the crowns of shrubs.

3.3.1.2 Mulch balled and burlapped, bare-root stock, and container grown stock immediately after completing backfill, and before watering to a depth of two inches.

3.3.2 Balled and Burlapped Stocks: Backfill with prepared topsoil mixture to approximately half the depth of ball and then tamp material. Carefully remove or fold back excess burlap and tying material. Tamp and complete backfill, place mulch, and water.

3.3.3 Container Grown Stock: Remove from container to prevent damage to plant or root system. Cut root ball vertically in two to three places with sharp knife before planting.

3.3.4 Ground Covers and Vines: Plant after placing mulch. Do not remove from flats and containers until immediately before planting. Space as the drawings indicated, sufficiently deep to cover all roots. Immediately sprinkle with water until entire area is soaked. Smooth planting areas after placing mulch, even, smooth finish. Mulch as indicated.

3.3.6.2 Apply all herbicides and other chemicals in accordance with EPA label restrictions and recommendations and federal and state laws. Application at each site shall be under the supervision of a certified applicator.

3.3.6.3 Apply in well ventilated areas. Avoid inhalation, injection, or spilling on clothing or skin. Wear protective clothing. In accordance with manufacturer's Material Safety Data Sheet recommendations. When permissible exposure limit is exceeded, utilize respirators meeting requirements of ANSI A88.2.

3.3.6.4 Dispose of excess chemicals and containers in a legal and safe manner.

3.3.6.5 Apply so damage will not result to personnel or property from either direct spray or drifting of chemicals.

3.3.7 Annual flower beds shall consist of 8" of required "Soil Mix" above existing grade. Ensure that the subgrade drains.

3.4 FINISHING:

3.4.1 Edging: Uniformly edge beds of individual plants to provide a clear cut division line between planted area and adjacent lawn. Form beds as indicated. Make individual plant pits circular in shape.

3.4.2 Mulching: Provide four inches pine straw mulch around plants and plant beds and in other areas as indicated on plan. Keep mulch off buildings, sidewalks, light standards, and other structures.

3.4.3 Staking and Guying:

3.4.3.1 Stake, guy, and place deadmen for plantings as indicated. Guying shall be taut enough for support under windy conditions but not tight.

3.4.3.2 Hold plants firmly between stakes with double-strand of 12 gauge guying wire. Use hose chafing guards, as specified, where wire will contact the plant. Provide turnbuckles as indicated.

3.4.3.3 Drive support stakes vertically as indicated on planting details. Do not injure ball or roots. Stakes shall be inside the mulch ring and shall be driven deep enough to be covered by mulch.

3.4.3.4 Securely fasten flags on each guy wire approximately two thirds of the distance up from ground level.

3.4.3.5 Pruning: Prune in accordance with safety requirement of ANSI Z 133.1.

3.4.4. Remove dead and broken branches. Make cuts with sharp instruments flush with the branch collar to insure elimination of stubs.

3.4.5 Water: Thoroughly water all plants immediately after planting. This shall mean full and thorough saturation of all backfill in the pits and beds during the same day of planting. Apply water only by open-end hose at a very low pressure to avoid air pockets and injury to the roots. When planted, watered, and fully settled, the plants shall be vertical.

3.5 MAINTENANCE:

3.5.1 Commencement: Begin maintenance immediately after each plant is planted.

3.5.2 Inspection: Inspect plants at least once a week during installation period and perform needed maintenance promptly.

3.5.3 Replacement: Until the work under this contract is certified as complete by the Owners Representative, maintain all plants in a healthy growing condition by watering, pruning, spraying, tightening of guys, weeding, and any other necessary operation: remove and replace plants in a badly impaired condition during the planting season; fertilize all plants planted in the fall planting season, the following spring, and in the early summer to permit new growth to harden off before cold weather. Apply fertilizer at the rate indicated under 2.5.1. Fertilizing. Mulch shall first be re-laid back, fertilizer applied and mulch replaced.

3.6 FINAL INSPECTION AND ACCEPTANCE:

3.6.1 Final Inspection: Upon completion of work final inspection will be made upon written request at least 10 days prior to the anticipated date. Prior to final inspection, fertilize all plants by broadcasting at one pound per 100 square feet of plant pit or bed area or by tablet or packet form with controlled release fertilizer.

3.6.2 Final Acceptance: Based on compliance with the following:

3.6.2.1 Plants have been accepted and required number of replacements are in place.

3.6.2.2 Plants beds and plant saucers are properly mulched and free of weeds.

3.6.2.3 Stakes and wire guys are in good condition.

3.6.2.4 Remedial measures directed by Owner's Representative to ensure plant survival have been carried out.

3.6.2.6 Plant materials have been fertilized as required.

3.6.2.6 Site has been cleaned of all trash, dirt in paved areas, and on walks located during installation, and all debris as a result of installation.

3.7 GUARANTEE:

3.7.1 All trees, shrubs, and ground cover shall be guaranteed for a period of one year beginning at time of final acceptance.

3.7.2 Contractor's Responsibility: During the guarantee period, it shall be the Contractor's responsibility to monitor the maintenance of the plant-material installed under this contract. The Contractor shall notify the Owner in writing of any deficiencies or excessive water back across burlap and tying material. Temp and complete backfill, place mulch, and water.

3.7.3 Container Grown Stock: Remove from container to prevent damage to plant or root system. Cut root ball vertically in two to three places with sharp knife before planting.

LAWNS

PART 1 - GENERAL

1.1 SCOPE OF WORK: Provide seedbed preparation, liming, fertilizing, seeding, and mulching of all newly graded finish earth surfaces, unless indicated otherwise, and all areas inside or outside the limits of construction that are disturbed by the Contractor's operation and all areas identified as "lawn". Areas shall be hydroseeded, except small areas that are inaccessible to the hydroseeding equipment, which shall be drilled seeded.

1.2 SUBMITTALS:

1.2.1 Contractor shall furnish Certificates of Conformance from manufacturers or agencies.

- a. Seed
- b. Fertilizer
- c. Lime
- d. Soil Testing Recommendation - NC Department of Agriculture

1.2.2 Manufacturer's Literature: Including physical characteristics, application and installation instructions, and recommendations:

- a. Hydraulic Mulch Material
- b. Erosion Control Material

1.3 DELIVERY:

1.3.1 Fertilizer and Lime: Deliver materials to the site in the original, unopened containers bearing the manufacturer's chemical analysis, name, trade name, and indication of conformance to state and federal laws. In lieu of containers, furnish fertilizer and lime in bulk with a certificate indicating the above information accompanying each delivery.

1.3.2 Seed: Deliver seed to the site in original sealed packages bearing the producer's guaranteed analysis for percentages of mixtures, purity, germination, weed seed content, and inert material. Label in conformance with USDA Federal Seed Act 53 Stat. Rules and Regulations and applicable state seed laws. Wet, moldy, or otherwise damaged seed will be rejected.

1.4 STORAGE AND HANDLING: Store lime, fertilizer, and seed in dry locations away from contaminants. Protect seed from drying out. When handling materials, do not drop or dump from vehicles.

PART 2 - PRODUCTS

2.1 SEED: State-certified seed of the latest season's crop and shall contain no noxious weeds.

Variety	Min. Purity	Germin. Rate
*Rebel II Fescue	100%	97%
		85% new seeding (or approved equal)
		305 lb./acre or 7 1/2 b. per 1000 sq. ft. over seeding
		218 lb./acre or 5 1/2 b. per 1000 sq. ft.

2.2 LIME: ASTM C 602, commercial agricultural limestone containing a minimum of 94 percent of total carbonate, 42 percent calcium, and 42 percent magnesium. Provide the following ASTM E 11 gradation: minimum 100 percent passing the No. 20 sieve and 75 percent passing the No. 100 sieve. Application rates shall be as recommended by the NC Department of Agriculture through standard soil testing procedures.

2.3 FERTILIZER: Commercial grade, free flowing, uniform in composition and bearing the manufacturer's guaranteed statement of analysis. Analysis of fertilizer and application rates shall be as recommended by the NC Department of Agriculture through soil testing procedures.

2.4 MULCH: Free from noxious weeds, mold, or other deleterious material. Provide wood cellulose fiber when hydroseeding.

2.4.1 Straw: Struck from oats, wheat, rye, barley, or rice. Finish air-dry condition and of proper consistency for plowing with commercial mulch-blowing equipment.

2.4.2 Wood Cellulose Fiber: Processed to contain no growth or germination-inhibiting factors and dyed an aggregate color to facilitate visual metering of materials application. Composition on air-dry weight basis: 9-15 percent moisture, pH range from 3.5 to 5.0.

2.5 ASPHALT ADHESIVE: Emulsified asphalt conforming to ASTM D 977, Grade RS-1. Use with screw mulch.

2.6 WATER: Suitable quality for irrigation.

PART 3 - EXECUTION

3.1 PREPARATION:

3.1.1 Seed bed preparation